

Table 1 Results controlling for factors associated with semen collection

	Semen requested	Semen provided	Semen success rate (%)	POR* (95% CI)	p Value
Total	212	145	68		
Client age (years)					
18–21	33	23	70	Not significant	
22–29	104	70	67		
≥30	75	52	69		
Marital status					
Single	67	46	69	1.0 (referent)	
Married	117	75	64	2.56 (1.10 to 5.94)	0.03
Divorced/widowed	28	24	86	0.45 (0.08 to 2.39)	0.35
Educational status					
Up to primary school	135	89	66	Not significant	
More than primary school	77	56	73		
Religion					
Muslim	16	14	88	Not significant	
Christian	164	112	68		
Other/none	32	19	59		
Sex of clinician					
Sex data unavailable	27	8	30		
Male	81	72	89	1.0 (referent)	
Female	104	65	63	1.99 (0.68 to 5.82)	0.21†
STI status					
Dermatology clinic	84	73	87	1.0 (referent)	
Urethritis alone	38	28	74	2.43 (0.62 to 9.63)	0.21
Genital ulcers (GU) alone	41	21	51	5.55 (1.52 to 20.34)	0.01
Both GU and urethritis	49	23	47	9.55 (2.65 to 34.36)	<0.001
HIV status					
HIV positive	162	112	70	Not significant	
HIV negative	50	33	64		

*POR, prevalence odds ratio, the odds that the specified factor is associated with failure to collect semen among those men asked for a sample (n = 185) adjusting for marital status, clinician sex, and STI status.

†Sex, while no longer a statistically significant predictor of semen producing success, confounds the relation between STI status and successful production of semen.

genital ulcer or being married were both associated with failure to successfully masturbate and produce a semen sample; 87% of men without symptomatic STIs successfully produced semen.

The Chichewa word for semen, *umuna*, is derived from the word for man, *amuna*, and can be translated as “the essence of man.” Reflecting this linguistic point, the focus group reported that semen was seen as a powerful, supernatural substance that could be used to inflict harm upon the donor if it were misused. However, seven of eight focus group members understood the importance of collecting semen for research purposes. The focus group also revealed additional barriers to successful semen collection beyond having an STD including time pressure and perceived privacy. The focus group did not reach a consensus about why married men may be less successful at donating semen, but there was the suggestion that single men are more likely to masturbate as part of their daily lives so they are more comfortable doing it when asked to donate semen.

We found that the collection of semen for HIV and STI research is possible in a sub-Saharan African setting. To optimise the semen collection success rate we recommend minimising semen requests for men with acute genital symptoms and creating a quiet, non-urgent climate for sample donation. The techniques we have used to improve our success rate are (1) to give subjects the option of providing the semen sample at home as long as they agree to comply with the specimen collection requirements, specifically to deliver the sample no more than 2 hours after collection, and (2) to provide a

semen collection space away from busy clinic corridors and allow ample time for collection.

M A Price, M S Cohen

Department of Epidemiology, University of North Carolina at Chapel Hill, NC, USA

M A Price, I F Hoffman, M S Cohen

School of Medicine, University of North Carolina at Chapel Hill, NC, USA

D Chilongozi, F E A Martinson, T Tembo

UNC Project, Lilongwe, Malawi

Correspondence to: Matt Price, International AIDS Vaccine Initiative, 901 Mariners Island Blvd, Suite 555, San Mateo, CA 94404, USA; mprice@iavi.org

doi: 10.1136/sti.2004.012104

Accepted for publication 30 June 2004

This study has been approved by the UNC Chapel Hill School of Medicine ethics board (Chapel Hill, NC, USA), and the Malawi Health Sciences Research Committee (Lilongwe, Malawi).

No authors have competing interests and all have contributed to the creation of this manuscript.

References

- 1 Gupta PC, Leroux BK, Patterson L, et al. Human immunodeficiency virus type 1 shedding pattern in semen correlates with the compartmentalization of viral quasi species between blood and semen. *J Infect Dis* 2000;182:79–87.
- 2 Vernazza PL, Troiani L, Flepp MJ, et al. Potent antiretroviral treatment of HIV-infection results in suppression of the seminal shedding of HIV. The Swiss HIV Cohort Study. *AIDS* 2000;14:117–21.

3 Cohen MS, Hoffman IF, Royce RA, et al. Reduction of concentration of HIV-1 in semen after treatment of urethritis: implications for prevention of sexual transmission of HIV-1. *Lancet* 1997;349:1868–73.

4 Price M, Zimba D, Hoffman I, et al. The addition of treatment for trichomoniasis to the syndromic management of urethritis in Malawi: a randomized clinical trial. *Sex Transm Dis* 2003;30:516–22.

First case of spectinomycin resistant *Neisseria gonorrhoeae* isolate in New Delhi, India

Spectinomycin is recommended as an alternative antimicrobial in CDC treatment guidelines of uncomplicated gonococcal infection.¹ There are reports available on spectinomycin resistant *Neisseria gonorrhoeae* isolates from China, Philippines, and Sri Lanka but no resistance has been reported from India and other South East Asia Region countries such as Bangladesh, Thailand, and Indonesia.² To our knowledge, this is the first report of spectinomycin resistant *N gonorrhoeae* from India.

A 21 year old female patient with a history of vaginal discharge for the past month, attended the gynaecology outpatient department of Safdarjung Hospital in August 2002. On speculum examination purulent cervical discharge was noticed. Investigations were carried out for demonstration and isolation of *N gonorrhoeae*, *Candida albicans*, *Trichomonas vaginalis*, and pyogenic organisms using standard techniques. Endocervical curettages were collected for *Chlamydia trachomatis* antigen detection. Blood specimen was taken for VDRL, TPHA, HIV (after pretest counselling), and HBs Ag. All the tests proved negative, but on microscopy of the endocervical smear, Gram negative intracellular diplococci were observed. *N gonorrhoeae* was isolated on chocolate agar and saponin lysed blood agar with VCNT inhibitors. Standard methods³ were utilised for confirmation of the isolate. Antimicrobial susceptibility testing towards penicillin, tetracycline, ciprofloxacin, ceftriaxone, and spectinomycin was carried out by the Australian Gonococcal Surveillance Programme method based on the calibrated dichotomous sensitivity technique.³ The isolate was observed to be sensitive to penicillin, tetracycline, ciprofloxacin, and ceftriaxone but resistant to spectinomycin. Minimum inhibitory concentration by agar dilution technique was observed to be 128 µg/ml (cut-off value for spectinomycin resistance ≥128 µg/ml).

The patient was treated with ciprofloxacin 500 mg, single dose. Test of cure was performed after 2 weeks.

The regional STD Teaching, Training and Research Centre has been monitoring antimicrobial susceptibility of *N gonorrhoeae* for penicillin, tetracycline, ciprofloxacin, and ceftriaxone since 1995 and has been acting as the WHO regional reference laboratory for the Gonococcal Antimicrobial Susceptibility Programme (GASP) in South East Asia Region since 1999. Antimicrobial susceptibility testing for spectinomycin started in 2000 under GASP.

From 2000 to 2003 antimicrobial susceptibility testing has been carried out in 449 consecutive isolates of *N gonorrhoeae*. Out of 449 isolates, 413 were from male patients with acute gonococcal urethritis and 36 from females with cervicitis. All the isolates were

found to be sensitive to spectinomycin except this isolate.

This centre is also collecting and analysing data from focal point laboratories in India under GASP (Chennai, Delhi, Hyderabad, Kolkata) and 100% isolates were reported to be sensitive to spectinomycin in India.

Detection of a spectinomycin resistant isolate is a cause for concern as there are reports of resistance from other countries—as high as 11.1% from China.⁴ Spectinomycin is the best alternative for patients allergic to cephalosporins.

Acknowledgements

The authors acknowledge WHO SEAR, New Delhi for financial assistance and Dr J Tapsall, Neisseria Reference Laboratory, Prince of Wales Hospital, Sydney, Australia for supplying antibiotic discs and WHO reference strains. The authors thank Mrs Leelamma Peter for technical assistance.

M Bala, K Ray

Regional STD Teaching, Training and Research Centre, Vardhman Mahavir Medical College and Safdarjang Hospital, New Delhi, India

S Salhan

Department of Obstetrics and Gynaecology, Vardhman Mahavir Medical College and Safdarjang Hospital, New Delhi, India

Correspondence to: Dr Manju Bala, Sector 13, Block J, Q No 4/1, M S Flats, R K Puram, New Delhi, 110022; manjubala_2@hotmail.com

doi: 10.1136/sti.2004.011569

Accepted for publication 7 June 2004

References

- 1 **Centres for Disease Control.** Sexually transmitted diseases treatment guidelines 2002. *MMWR* 2002;**51**(No RR-6):1–78.
- 2 **Bala M, Ray K, Kumari S.** Alarming increase in ciprofloxacin and penicillin resistant *Neisseria gonorrhoeae* isolates in New Delhi, India. *Sex Transm Dis* 2003;**30**:523–5.
- 3 **World Health Organization.** *Laboratory diagnosis of gonorrhoea*. WHO Regional Publication, South East Asia series No 33. Geneva: WHO.
- 4 **Li GM, Chen Q, Wang SC.** Resistance of *Neisseria gonorrhoeae* epidemic strains to antibiotics: report of resistant isolates and surveillance in Zhanjiang, China: 1998 to 1999. *Sex Transm Dis* 2000;**27**:115–18.

Are all genital *Chlamydia trachomatis* infections pathogenic?

The relation between non-gonococcal urethritis (NGU) and *Chlamydia trachomatis* infection continues to arouse interest.¹ The recent study by Haddow *et al* confirms the findings we published earlier²—that is, that 34–37% of men who are chlamydia positive do not show NGU on microscopy. However, they found that 20% of men with NGU had chlamydia. In our study this was 66%, perhaps reflecting the higher prevalence of chlamydia in our department—that is, 13% compared with 8%. Our rate for chlamydia negative, non-NGU was 78% and for NGU 22%, results we have confirmed in data collected between December 2002 and December 2003.

In our study we speculate that not all serovars are pathogenic with some not causing inflammation. We too feel that of the 22% of men who had non-chlamydia NGU it is

highly likely that the organism is *Mycoplasma genitalium*.

We are disappointed our earlier study was not cited by Haddow *et al*, particularly as the senior author had had sight of our original manuscript.

Correspondence to: Dr Chris Butler, Department of Infectious Diseases and Sexual Health, St Luke's Hospital, Bradford BD5 0NA, UK: chris.butler@bradfordhospitals.nhs.uk

doi: 10.1136/sti.2004.012443

Accepted for publication 18 July 2004

References

- 1 **Haddow LJ, Bunn A, Copas AJ, et al.** Polymorph count for predicting non-gonococcal urethral infection: a model using *Chlamydia trachomatis* diagnosed by ligase chain reaction. *Sex Transm Infect* 2004;**80**:198–200.
- 2 **Butler C, Dewson C, Evangelou G.** Are all genital *Chlamydia trachomatis* infections pathogenic? A study in men. *Sex Transm Infect* 2003;**79**:349.

High HIV risk profile among female commercial sex workers in Vinnitsa, Ukraine

In many countries significantly higher rates of HIV infection have been documented among sex workers compared to most other population groups.¹ We have analysed HIV risk behaviour among the female commercial sex workers in Vinnitsa, Ukraine, because this issue is still unstudied in the country.

The study protocol was approved by the ethics committee of Vinnitsa Pirogov Medical University. Data collection was carried out in May to July, 2003 using a cross sectional design with a self reported questionnaire method and was linked to the programme “Network of mobile and information support

for female sex workers” operated by the non-government organisation (NGO) “Stalist.” This programme provides informational support, medical service, and condoms for female sex workers in Vinnitsa region. Trained outreach workers of NGO “Stalist” performed recruitment of subjects on the major roads of the city. Oral informed consent in all cases was obtained.

Altogether, 58 sex workers were involved into the study. The age of the participating women ranged from 15 to 34 years, with a mean age of 23.1 years. Around 25 (44.8%) respondents provided financial support from others (parents, children, husband, etc). Even though nine (15.5%) women had said that they were married, only four (6.9%) were living with their husbands, and 46 (79.3%) did not have a husband or a regular sexual partner. In spite of the fact that 46 (79.3%) female sex workers believe that they are not at risk, our results show a high HIV risk profile in this group (table 1).

It is well known that use of injecting drugs is a powerful factor for HIV transmission, and our findings highlight considerable prevalence of injecting drug use among sex workers in Vinnitsa. High rates of sharing injecting paraphernalia were registered as well, which, in our opinion, is the consequence of being “injection dependent.” In Canada it was identified that needing help injecting was a strong risk factor for syringe sharing,² and it is troubling that this risk factor has now been identified as a predictor of HIV seroconversion.³

Our data showed that permanent use of condoms was low, in spite of the fact that most of the respondents accepted that having sex without condoms increases the risk of HIV. Being on the margin of society, the ability of commercial sex workers to negotiate safer working conditions is limited. Their financial position can make them vulnerable to customers willing to pay more

Table 1 HIV risk profile among female commercial sex workers (n = 58)

Variable	No	%	95% CI*
Injecting drug use at least once	41	71	57.3 to 81.9
Regular injecting drug use	34	59	44.9 to 71.4
Injecting drug practice†			
Borrow used syringes	8	24	10.7 to 41.2
Lend used syringes	3	9	1.9 to 23.7
Require assistance injecting	13	38	22.2 to 56.4
Inject drugs in a group	11	32	17.4 to 50.5
Number of clients per average day			
One or two	8	14	6.1 to 25.4
Three or four	21	36	24.0 to 49.9
Five and more	29	50	36.6 to 63.4
Condom use during the last sexual contact	38	66	51.9 to 77.5
Condom use during the past month			
Always	29	50	36.6 to 63.4
More than in the half of cases (>50%)	16	28	16.7 to 40.9
In the half of cases (50%)	8	14	6.1 to 25.4
Less than in the half of cases (<50%)	5	9	2.9 to 19.0
Reasons for occasionally not using condoms during sex trade			
Client refusal	32	55	41.5 to 68.3
Higher payment	23	40	27.0 to 53.4
Permanent client	24	41	28.6 to 55.1
Use of psychoactive substances before a sexual contact during the past month			
Always	12	21	11.2 to 33.4
More than in the half of cases (>50%)	16	28	16.7 to 40.9
In the half of cases (50%)	24	41	28.6 to 55.1
Less than in the half of cases (<50%)	4	7	1.9 to 16.7
Never	2	3	0.4 to 11.9

*Confidential interval.

†Among regular injecting drug users.